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EXAMINER

LEE, PHILIP C

ART UNIT

PAPER NUMBER

2154

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/684,472

Applicant(s)

KRISHNAMOORTHY ET AL.

Examiner

Philip C Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 18-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

1. This action is responsive to the amendment and remarks filed on November 22, 2004.
2. Claims 18-35 are presented for examination and claims 1-17 are cancelled.
3. The text of those sections of Title 35, U.S. code not included in this office action can be found in a prior office action.

*Claim Rejections - 35 USC 112*

4. Claims 18-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
  - a. Claim language in the following claims is not clearly understood:
    - i. As per claim 18, line 18, the term "may be" is a relative term which renders the claim indefinite. The term "may be" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention (i.e. unclear if a particular module may be or may not be installed).

Claim Rejections – 35 USC 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 18-28, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mann.

7. Mann was cited in the last office action.

8. As per claim 18, Mann taught the invention substantially as claimed comprising:

an integrated management agent (e.g. 16, 26 and 24, fig. 1, the combination of Network Control Console, Point of Presence and Broker performed the function of an integrated management agent as claimed) capable of managing components of a network (col. 4, lines 40-53), the integrated management agent comprising a device agent;

the device agent (e.g. 26, fig. 1, Point of Presence) comprising an object-based device handler sublayer and a protocol-dependent device handler sublayer (e.g. node handling network management interfaces) (col. 6, lines 13-41), the protocol-dependent device handler sublayer comprising multiple modules (36-42, fig. 1), each respective module of the multiple modules

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adapted to support a respective device-type-specific protocol (e.g. 40, fig. 1, Dynamic Host Configuration Protocol service) (col. 6, lines 31-41); and

wherein a particular module of the multiple modules that is adapted to support a particular device-type-specific protocol may be installed to or uninstalled from the protocol-dependent device handler sublayer independently of other modules of the multiple modules while the integrated management agent is running (col. 12, lines 13-47)

9. Mann did not specifically teach managing components of a storage area network.

However, Mann taught different implementations may be used and may include other types of operating systems, computing platforms, computer programs, firmware and/or general purpose machines (col. 4, lines 30-33). It would have been obvious to one having ordinary skill in the art at the time of the invention was made to include components of a storage area network because by doing so would increase the field of use in their system.

10. As per claim 19, Mann taught the invention substantially as claimed in claim 18 above.

Mann further taught wherein the integrated management agent further comprises an object manager that represents the components of the SAN as objects, and wherein the object-based device handler sublayer provides an interface between the object manager and the protocol-dependent device handler sublayer to permit an object level interface to the devices (col. 5, lines 24-40).

11. As per claim 20, Mann taught the invention substantially as claimed in claim 18 above. Mann further taught wherein the integrated management agent further comprises a dynamic list of device-type-specific protocols that it is capable of using, wherein each device-type-specific protocol is associated with a list of objects and methods, and wherein a given list of objects and methods is added to the dynamic list when a given module of the multiple modules supporting a given device-type-specific protocol is installed to the protocol-dependent device handler sublayer (col. 6, lines 24-30; col. 10, lines 67-col. 11, lines 26).

12. As per claim 21, Mann taught the invention substantially as claimed in claim 19 above. Mann further taught wherein the integrated management agent further comprises a consistent user interface module coupled to the object manager, wherein at least one device type-specific module is installed (col. 6, lines 24-30), and wherein the at least one device type-specific module further comprises a device handler for coupling a storage system to the integrated management agent (col. 11, lines 14-22).

13. As per claim 22, Mann taught the invention substantially as claimed in claim 21 above. Mann further taught wherein at least one device type-specific module further comprises code for supporting a plurality of protocols to communicate with a plurality of devices (col. 6, lines 49-54).

14. As per claim 23, Mann taught the invention substantially as claimed in claim 22 above. Mann further taught wherein the management system further comprises a distributed error and

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status handler capable of handling error and status information from at least one device (col. 11, lines 39-col. 12, lines 12).

15. As per claim 24, Mann taught the invention substantially as claimed in claim 23 above. Mann further taught wherein at least a first level of the distributed error and status handler executes on the at least one device (col. 9, lines 54-65).

16. As per claims 25 and 26, Mann taught the invention substantially as claimed in claim 24 above. Mann further taught wherein the at least one machine selected from the group comprising of a host and an appliance, incorporates a second level of error and status handler (col. 9, lines 6-35).

17. As per claim 27, Mann taught the invention substantially as claimed in claim 25 above. Mann further taught wherein the centralized global error and status handler level executes upon a fault tolerant system in a storage area network management environment (col. 9, lines 66-col. 10, lines 18).

18. As per claim 28, Mann taught the invention substantially as claimed in claim 18 above. Mann further taught wherein the integrated management agent further comprises a trap handler coupled to a notification module to receive traps from at least one SAN device and send notification to at least one system administrator (col. 8, lines 56-col. 9, lines 12).

19. As per claim 30, Mann taught the invention substantially as claimed in claim 18 above. Mann further taught wherein the integrated management system is capable of being configured with a configuration utility (col. 9, lines 66-col. 10, lines 18).

20. As per claim 31, Mann taught the invention substantially as claimed in claim 18 above. Mann further taught wherein the object manager further comprises a dynamic list indicating device types the integrated management agent is capable of handling, wherein installing device type-specific modules causes addition of device types to the dynamic list, and wherein addition of device types to the dynamic list does not require shutting down the integrated management agent (col. 10, lines 67-col. 11, lines 26).

21. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mann in view of Singh et al, U.S. Patent 5,758,083 (hereinafter Singh).

22. Singh was cited in the last office action.

23. As per claim 29, Mann did not teach sending traps to support at least a second management system. Singh taught wherein the integrated management agent further capable of sending traps to support at least a second management system (col. 2, lines 8-25; col. 21, lines 40-50).



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24. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of Mann and Singh because Singh's method of sending traps to a second management system would increase the user alertness of Mann's system by allowing user to take corrective action to improve network performance by taking into consideration important network information about remote networks (col. 4, lines 58-62)

25. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mann in view of Tawil, U.S. Patent 6,421,723 (hereinafter Tawil).

26. Tawil was cited in the last office action.

27. As per claim 32, Mann taught the invention substantially as claimed in claim 31 above. Mann did not teach the network interconnection system comprises at least one fibre channel switch. Tawil taught wherein the network interconnection system further comprises at least one fibre channel switch, and wherein a device type specific module is type specific to the at least one fibre channel switch (col. 3, lines 50-col. 4, lines 3).

28. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of Mann and Tawil because Tawil's method of including a fibre channel switch would enhance Mann's system by using fibre channel technology to allow data and network protocols to coexist on the same physical media (col. 4, lines 12-19).

29. Claims 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mann in view of Chrabaszcz, U.S. Patent 6,212,585 (hereinafter Chrabaszcz).

30. Chrabaszcz was cited in the last office action.

31. As per claim 33, Mann taught the invention substantially as claimed in claim 18 above. Mann did not teach a firmware download module. Chrabaszcz taught wherein the integrated management system further comprises a firmware download module with unified user interface hiding device specific firmware download process and characteristics from the administrator (col. 10, lines 49-col. 11, lines 15).

32. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of Mann and Chrabaszcz because Chrabaszcz's method of automatically downloading the firmware for a device would increase the efficiency of Mann's system by avoiding the time consuming and tedious process of manually loading an appropriate driver for the device (col. 3, lines 15-27).

33. As per claims 34 and 35, Mann taught the invention substantially as claimed in claim 18 above. Mann did not teach the different element of the conglomerate method. Chrabaszcz taught wherein the integrated management agent is capable of discovering devices and agents in the SAN and their interconnection by applying a conglomerate method comprising at least two

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elements selected from the group comprising host and device agent broadcasting, multicasting device identity, collecting addresses from network traffic, collecting information from a name server, scanning a set of ranges of address supplied in configuration information, and collecting information about devices from configuration information (col. 9, lines 49-col. 10, lines 49).

34. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of Mann and Chrabaszcz because Chrabaszcz's method of discovering devices and agents in the SAN and their interconnection would increase the efficiency of Mann's system by avoiding the time consuming and tedious process of manually configuring new devices added to the integrated management agent.

35. Applicant's arguments with respect to claims 18-20, filed 8/24/04, have been fully considered but are not deemed to be persuasive.

36. In the remark applicant argued that

(1) the cited reference fails to teach limitation recited in claim 18.

a. In response to point (1), Mann et al, U.S. Patent 6,654,801, taught the invention substantially as claimed comprising:  
an integrated management agent (e.g. 16, 26 and 24, fig. 1, the combination of Network Control Console, Point of Presence and Broker performed the function of an integrated

management agent as claimed) capable of managing components of a network (col. 4, lines 40-53), the integrated management agent comprising a device agent; the device agent (e.g. 26, fig. 1, Point of Presence) comprising an object-based device handler sublayer and a protocol-dependent device handler sublayer (e.g. node handling network management interfaces) (col. 6, lines 13-41), the protocol-dependent device handler sublayer comprising multiple modules (36-42, fig. 1), each respective module of the multiple modules adapted to support a respective device-type-specific protocol (e.g. 40, fig. 1, Dynamic Host Configuration Protocol service) (col. 6, lines 31-41); and wherein a particular module of the multiple modules that is adapted to support a particular device-type-specific protocol may be installed to or uninstalled from the protocol-dependent device handler sublayer independently of other modules of the multiple modules while the integrated management agent is running (col. 12, lines 13-47). (Note: Mann taught that the Network Control Console (NCC) subscribes to heartbeats from a plurality of services located at two Point of Presences (POP) (fig. 3; col. 8, lines 13-17). Each of the plurality of services must publish heartbeats to the NCC by *default* to indicate that the services are operational (col. 8, lines 10-20). Mann further taught that a newly installed service must also publish heartbeat to the NCC (col. 12, lines 25-30). It means that the publish heartbeat of the newly installed service does not interrupt the plurality of services from publishing heartbeats (i.e. while the integrated management agent is still running).)

b. Mann did not specifically teach managing components of a storage area network. However, Mann taught different implementations may be used and may include other

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types of operating systems, computing platforms, computer programs, firmware and/or general purpose machines (col. 4, lines 30-33). It would have been obvious to one having ordinary skill in the art at the time of the invention was made to include components of a storage area network because by doing so would increase the field of use in their system. Mann et al was cited in the previous office action. The teaching of Mann et al taught the limitations substantially as claimed in claim 18.

32. A shortened statutory period for reply to this Office action is set to expire THREE MONTHS from the mailing date of this action. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip C Lee whose telephone number is (571)272-3967. The examiner can normally be reached on 8 AM TO 5:30 PM Monday to Thursday and every other Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571)272-3964. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)350-6121.

P.L.

A handwritten signature in black ink, appearing to read "N. El-Hady", with a long, sweeping flourish extending downwards and to the right.